

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP**

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

OMB APPROVAL	
OMB Number:	3235-0287
Estimated average burden hours per response:	0.5

1. Name and Address of Reporting Person* <b>FLOOD DOUGLAS</b>  (Last) (First) (Middle) <b>4 CONSTITUTION DRIVE</b>  (Street) <b>SOUTHBOROUGH MA 01772</b>  (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <b>MERCURY COMPUTER SYSTEMS INC</b> <b>[ MRCY ]</b>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable)  Director 10% Owner Officer (give title below) Other (specify below) <b>VP, Corporate Development</b>
	3. Date of Earliest Transaction (Month/Day/Year) <b>08/02/2007</b>	
		6. Individual or Joint/Group Filing (Check Applicable Line)  <input checked="" type="checkbox"/> Form filed by One Reporting Person  <input type="checkbox"/> Form filed by More than One Reporting Person

**Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned**

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock	08/02/2007		M		1,188	A	\$8.625	23,390 <sup>(1)</sup>	D	
Common Stock	08/02/2007		M		6,812	A	\$8.625	30,202	D	
Common Stock	08/02/2007		S		296	D	\$11.47	29,906	D	
Common Stock	08/02/2007		S		4,800	D	\$11.5	25,106	D	
Common Stock	08/02/2007		S		302	D	\$11.52	24,804	D	
Common Stock	08/02/2007		S		400	D	\$11.53	24,404	D	
Common Stock	08/02/2007		S		200	D	\$11.54	24,204	D	
Common Stock	08/02/2007		S		800	D	\$11.55	23,404	D	
Common Stock	08/02/2007		S		100	D	\$11.56	23,304	D	
Common Stock	08/02/2007		S		1,102	D	\$11.57	22,202	D	

**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)**

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date					
Incentive Stock Option (Right to buy)	\$8.625	08/02/2007		M		1,188		10/27/2004	10/27/2008	Common 1,188	\$0 <sup>(2)</sup>	0	D	
Non-Qualified Stock Option (Right to buy)	\$8.625	08/02/2007		M		6,812		10/27/2004	10/27/2008	Common 6,812	\$0 <sup>(2)</sup>	0	D	

**Explanation of Responses:**

- 1. Includes 198 shares purchased on June 29, 2007 through the Employee Stock Purchase Plan.
- 2. Field N/A to this transaction but was completed to allow for electronic filing only.

Craig Barrows, Attorney-in-fact 08/03/2007

\*\* Signature of Reporting Person Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

\* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

\*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

